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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,187	06/12/2001	Toshio Morita	Q61610	1960

7590 06/16/2005

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EXAMINER
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LISH, PETER J

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/878,187

Applicant(s)

MORITA ET AL.

Examiner

Peter J. Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's arguments, filed 1/13/05, with respect to the rejection over Harada et al. have been fully considered and are persuasive. The rejection of the previous office action has been withdrawn.

Applicant's arguments with respect to the rejections over Tennent et al. with Lambert et al. and Tennent et al. with Colomer et al. have been fully considered but they are not persuasive. The applicants argue that the reference to Lambert et al. is only applicable to single-walled nanotubes. While it is true that Lambert et al. apply the treatment to a sample of single-walled nanotubes, it would be wrong to assume that Lambert teaches its use for the purification of single-walled nanotubes only. Rather, the removal of catalyst impurities from all nanotubes (multi-walled as well as single-walled) would have been envisioned by one of ordinary skill, as it is a problem that most nanotube samples have. It therefore would have been obvious to one of ordinary skill to apply the treatment of Lambert et al. to a sample of multi-walled carbon nanotubes, such as that of Tennent et al. Moreover, it is seen that single-walled nanotubes are vapor-grown carbon fibers and their method of production does not limit the fibers themselves.

The applicant also argues that the process of Lambert would not be suitable to achieve the claimed metal content. However, this is based solely the assumptions using one example and faulty computations. It is noted that Lambert teaches the removal of greater than 90% of the metal impurities, not specifically 90%. Additionally, various VGCF samples may have different metal contents and therefore the assumption that the process of Lambert et al. would be incapable of achieving the claimed metal content in the example of the applicants does not justify the conclusion that the process is incapable of meeting the claimed range. Unless it is

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shown that the process of Lambert et al. is incapable of meeting the claimed range, it is expected that the process be capable of achieving such, as it is seen to be almost identical to the process of the applicants.

Regarding the applicant's arguments with respect to Colomer et al., conclusive proof that all of the catalyst material is removed from the carbon samples is not required, nor does the examiner rely it upon. The lack of conclusive proof of an occurrence does not mean that such is not true and the expectation of such is maintained.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

Claims 13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tennent et al. (US 6,235,674) taken with Lambert et al. ("Improving conditions towards isolating single-shell carbon nanotubes").

The rejection of the previous office action is maintained in its entirety and incorporated herein by reference.

Claims 13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tennent et al. taken with Colomer et al. ("Different purification methods of carbon nanotubes produced by catalytic synthesis").

The rejection of the previous office action is maintained in its entirety and incorporated herein by reference.

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***Conclusion***


**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

PL

  
**STANLEY S. SILVERMAN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**